UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/788,281	02/16/2001	Bryan D. Skene	50002.02US11	5298

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EXAMINER
BAUGH, APRIL L

ART UNIT	PAPER NUMBER
2141	

DATE MAILED: 07/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/788,281	SKENE ET AL.
	Examiner	Art Unit	
	April L Baugh	2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _2-48_ is/are pending in the application.

     4a) Of the above claim(s) _1_ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _2-48_ is/are rejected.

7)☒ Claim(s) _3_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _16 February 2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
     Paper No(s)/Mail Date _5/24/01_.

4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claim 3 objected to because of the following informalities: Claim 3 is dependent upon

itself. Appropriate correction is required.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claim 2-5, 8-22, 25-38, 41-48 rejected under 35 U.S.C. 103(a) as being unpatentable

over US Patent No. 5,774,660 to Brendel et al. in view of Hu and further in view of Takahashi et

al.

Regarding claim 2, 22, and 38, Brendel et al. teaches a method of bridging disparate

content delivery networks (CDNs) across a plurality of zones within a network, comprising:

receiving a request from a client located within one of a plurality of zones for access to resources

associated with the domain name; determining network conditions for the network based on a

determination of the load for each of the plurality of zones , distributing the request to one of the

plurality of zones based on the determined network conditions; selecting one of the plurality of

servers within the zone; the selection of the server being based on a determination for optimally

balancing the load on the plurality of servers; (column 6, lines 20-26) resolving an Internet

protocol (ip) address of the selected server so that the accessing of resources associated with the domain name at the resolved ip address of the selected server will cause the load to be optimally balanced on the plurality of servers on a network and will bridge CDNs (column 5, lines 33-40 and column 7, lines 19-23 of Brendel et al.).

Brendel et al. does not teach determining the load for each of a plurality of servers. Hu teaches determining the load for each of a plurality of servers (column 2, line 15-16 of Hu). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the WWW server for resource based load balancing of Brendel et al. by determining the load because this allows the system to respond quicker to a client request.

Brendel et al. in view of Hu does not teach selecting an IP address associated with a plurality of servers and providing the selected IP address. Takahashi et al. teaches receiving a request for access to resources associated with a domain name, resolving the Internet protocol (ip) address for the domain name (column 1, line 23-65). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the WWW server for resource based load balancing of Brendel et al. in view of Hu by selecting an IP address associated with a plurality of virtual servers and receiving a request and providing the selected IP address because this way the system is not in direct contact with the and thus helps to balance the load on servers that are geographically spread out.

Referring to claim 3, Brendel et al. teaches the method of Claim 2, further comprises querying a local Domain Name System (DNS) to provide the ip address associated with the domain name (column 2, lines 29-32 of Brendel et al.).

Regarding claim 4, Brendel et al. teaches the method of Claim 3, wherein when the ip address is not present at the local DNS, querying a primary DNS to resolve the ip address associated with the domain name (column 2, lines 27-28 of Brendel et al.).

Referring to claim 5, Brendel et al. teaches the method of Claim 4, wherein when the primary DNS determines the domain name is delegated to a EDNS, further comprising referring the local DNS to the EDNS to resolve the ip address for the selected server, the EDNS employs at least one of a plurality of load balancing determinations to select one of the plurality of servers and resolve the ip address for the selected server (column 2, lines 20-28 of Brendel et al.).

Regarding claims 8 and 25, Brendel et al. teaches the method of claims 5 and 22 wherein selecting one of the plurality of servers, further comprises: marking each of a plurality of pool to a not tried state; determining a pool load-balancing setting; selecting one of the plurality of pools that is marked to the initialization state; marking the selected one of the plurality of pools to a tried state; attempting to obtain an answer using the determined pool load-balancing on the selected one of the plurality of pools; determining if the answer was obtained (column 5, lines 33-40 and column 7, lines 19-23).

Regarding claim 9 and 26, Brendel et al. teaches the method of claim 5 and 22 wherein selecting one of the plurality of servers, further comprises accounting for computing power behind a wide are virtual server (column 7, lines 15-16).

Regarding claims 10, 27, and 41, Brendel et al. teaches the method of claims 2, 22, and 38, further comprising identifying a proximity of the request; distributing the request based on the proximity (column 6, lines 20-26).

Regarding claim 11, Brendel et al. teaches the method of claim 10 wherein identifying a proximity of the request further comprises determining a geographic location of the request (column 6, lines 20-26).

Regarding claim 12, 28, and 42, Brendel et al. teaches the method of claim 11, 27, and 41, further comprising, creating a topology that maps the request to the geographic location (column 3, lines 2-6).

Regarding claims 13 and 29, Brendel et al. teaches the method of claim 12 and 28, wherein distributing the request based on the proximity further comprises, distributing the request to a closest server based on a closest identified geographic content-server or a best-performing content-server, or a best quality path (column 6, lines 20-26).

Regarding claims 14, 30, and 43, Brendel et al. teaches the method of claim 11, 27, and 41 wherein determining the geographic location of the request, further comprises: gathering metric information; and using the metric information to determine the geographic location of the request (column 6, lines 53-58).

Regarding claims 15, 31, and 44, Brendel et al. teaches the method of claim 14, 30, and 43 wherein gathering the metric information further comprises, gathering the metric information using active probing (column 6, lines 53-58).

Regarding claims 16 and 32, Brendel et al. teaches the method of claim 14 and 31 wherein gathering the metric information further comprises, gathering the metric information using passive probing (column 6, lines 53-58).

Regarding claims 17 and 33, Brendel et al. teaches the method as in claim 14 wherein gathering the metric information further comprises deriving cost metrics for network paths in topological maps (column 6, lines 20-26).

Regarding claims 18, 34, and 45, Brendel et al. teaches the method of claim 11, 27, and 41 wherein determining the geographic location of the request, further comprises using a last hop address to determine the geographic location of the request (column 6, lines 20-26).

Regarding claims 19, 35, and 46, Brendel et al. teaches the method of claim 2, 22, and 38, further comprising using a last-resort pool to select the server (column 5, lines 33-40).

Regarding claims 20, 36, and 47, Brendel et al. teaches the method of claim 2, 22, and 38, wherein at least a portion of the plurality of servers are virtual servers (column 7, lines 15-16).

Regarding claims 21, 37, and 48, Brendel et al. teaches the method of claim 20, 36, and 47 wherein selecting one of the plurality of servers within the zone in which the request was distributed, the selection of the server being based on a determination for optimally balancing the load across the plurality of servers, further comprising: determining if the selected server is a virtual server, and if so: determining a number of nodes up on the virtual server; determining if the number of nodes up or the number of connections for the virtual server exceeds a predetermined number and if so returning a value indicating the capacity of the virtual server has been exceeded (column 5, lines 33-40 and column 6, lines 20-26 and column 7, lines 15-16 and 19-23).

1.   Claim 6, 23, and 39 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,774,660 to Brendel et al in view of Hu and further in view of Takahashi et al. as

applied to claim 2-5, 8-22, 25-38, 41-48 above and further in view of Joffe et al. and Guenthner et al.

Regarding claim 6, 23, and 39, Brendel et al. in view of Hu and further in view of Takahashi et al. teaches the method of Claim 5, 22, and 38, wherein selecting one of the plurality of servers that will optimally balance the load and round robin (column 3, lines 5-6 of Brendel et al.).

Brendel et al. in view of Hu and further in view of Takahashi et al. does not teach static load balancing determinations being selectable and including random, static ratio, global availability and topology. Joffe et al. teaches further comprises choosing the server based on one of a plurality of static load balancing determinations for each server (column 2, lines 63-65 of Joffe et al.), the plurality of static load balancing determinations being selectable and including global availability and topology (column 3, lines 9-10 of Joffe et al.). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al. in view of Hu and further in view of Takahashi et al. by choosing the server based on one of a plurality of static load balancing determinations for each server because this allows the system to balance the load throughout the network.

Brendel et al. in view of Hu and further in view of Takahashi et al. and Joffe et al. does not teach the plurality of static load balancing determinations being selectable and including random. Guenthner et al. teaches the plurality of static load balancing determinations being selectable and including random (column 2, lines 24-25 of Guenthner et al.). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to

further modify the WWW server for resource based load balancing of Brendel et al. in view of

Hu and further in view of Takahashi et al. and Joffe et al. by plurality of static load balancing

determinations being selectable and including random because this is a technique for balancing

the load in a network.

2.   Claim 7, 24, and 40 rejected under 35 U.S.C. 103(a) as being unpatentable over US

Patent No. 5,774,660 to Brendel et al in view of Hu and further in view of Takahashi et al. as

applied to claim 2-5, 8-22, 25-38, 41-48 above and further in view of Shah et al. and Joffe et al.

Regarding claim 7, 24, and 40, Brendel et al in view of Hu and further in view of

Takahashi et al. teaches the method of claim 5, 22, and 38 wherein selecting one of the plurality

of servers that will optimally balance the load comprises choosing the server based on one of a

plurality of dynamic load balancing determinations for each server (column 2, lines 50-52 of

Hu), the dynamic load balancing determinations being selectable and including completion rate

(column 9, lines 20-22 of Hu).

Brendel et al in view of Hu and further in view of Takahashi et al. does not teach least

connections, packet rate, hops, or round trip time. Shah et al. teaches hops (column 2, line 28 of

Shah et al.), round trip times (column 1, lines 9-10 of Shah et al.), quality of service and dynamic

ratio. Therefore it would have been obvious to one having ordinary skill in the art at the time the

invention was made to further modify the WWW server for resource based load balancing of

Brendel et al in view of Hu and further in view of Takahashi et al. by having least connections,

packet rate, hops, or round trip time be used to load balance because this are techniques for

dynamically load balancing a network.

Brendel et al in view of Hu and further in view of Takahashi et al. and Shah et al. does

not teach least connections and packet rate. Joffe et al. teaches least connections (column 3, line

67 of Joffe et al.), packet rate (column 4, line 3 of Joffe et al.). Therefore it would have been

obvious to one having ordinary skill in the art at the time the invention was made to further

modify the WWW server for resource based load balancing of Brendel et al in view of Hu and

further in view of Takahashi et al. and Shah et al. by least connections and packet rate being used

to balance a network because this are techniques for dynamically load balancing a network.

Conclusion

3.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. The following patents are cited to further show the state of the art with respect to

balancing load distribution on a WAN in general: Stiles, Zisapel et al., Leighton et al., Vepa et

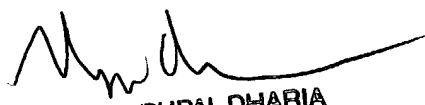al., Johnson et al., Jindal et al., Johnson et al., Karger et al., Coile et al.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to April L Baugh whose telephone number is 703-305-5317. The

examiner can normally be reached on Monday-Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Rupal D Dharia can be reached on 703-305-4003. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ALB

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SUPERVISORY PATENT EXAMINER